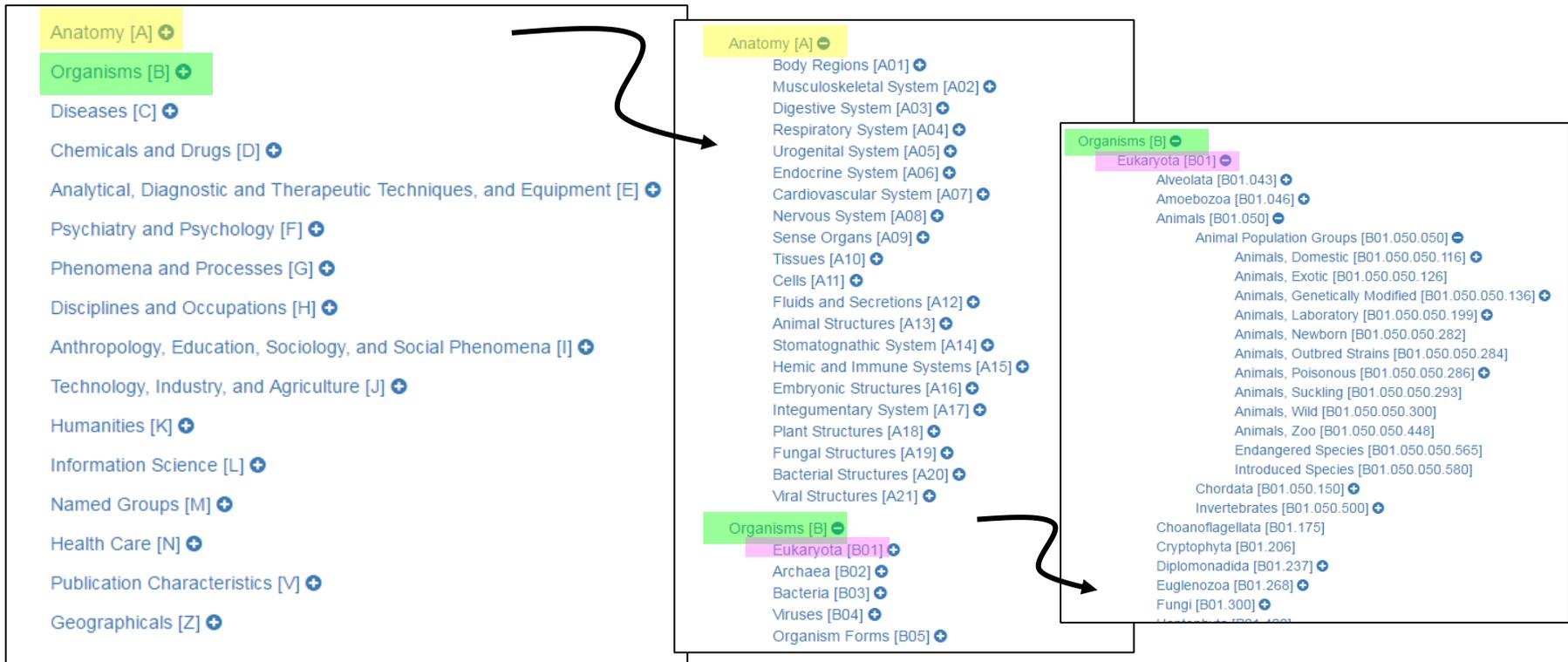


National Library of Medicine (NLM) Medical Subject Headings (MeSH)

- MeSH is the NLM's controlled vocabulary thesaurus.
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Example

Format: Abstract

[J Endocrinol](#). 2011 Jan;208(1):59-67. doi: 10.1677/JOE-10-0302. Epub 2010 Oct 25.

Growth-inhibiting conditions slow growth plate senescence.

Forcinito P¹, Andrade AC, Finkielstain GP, Baron J, Nilsson O, Lui JC.

Author information

Abstract

The mammalian growth plate undergoes programmed senescence during juvenile life, causing skeletal growth to slow with age. We previously found that hypothyroidism in rats slowed both growth plate chondrocyte proliferation and growth plate senescence, suggesting that senescence is not dependent on age per se but rather on chondrocyte proliferation. However, one alternative explanation is that the observed slowing of growth plate senescence is a specific consequence of hypothyroidism. We reasoned that, if delayed senescence is a general consequence of growth inhibition, rather than a specific result of hypothyroidism, then senescence would also be slowed by other growth-inhibiting conditions. In this study, we therefore used tryptophan deficiency to temporarily inhibit growth in newborn rats for 4 weeks. We then allowed the animals to recover and studied the effects on growth plate senescence. We found that structural, functional, and molecular markers of growth plate senescence were delayed by prior tryptophan deficiency, indicating that the developmental program of senescence had occurred more slowly during the period of growth inhibition. Taken together with previous studies in hypothyroid rats, our findings support the hypothesis that growth plate senescence is a general consequence of growth inhibition and hence that growth plate senescence is a general consequence of growth inhibition.

PMID: 20974641 DOI: 10.1677/JOE-10-0302

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[Rats, Sprague-Dawley](#)
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List of Mesh terms assigned to this publication